2/2 018 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AN0111995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FIVE ARTICLES PUBLISHED UNDER ONE TITLE ARE DEALING WITH THE STATE OF THE COMPUTER ART IN THE MOLDAVIAN REPUBLIC IN GENERAL, AND THE COMPUTATION CENTER OF THE MOLDAVIAN ACADEMY OF SCIENCES IN PARTICULAR. SOME TIME DURING 1970, THE COMPUTATION CENTER ACQUIRED A BESM 4 ELECTRONIC COMPUTER. IT IS THE SECOND GENERATION TRANSISTORIZED COMPUTER WITH THE MEMORY CAPABLE OF STORING 8,000 NUMBERS. IN ADDITION IT HAS THE EXTERNAL MEMORY CAPACITY CONSISTING OF 8 MAGNETIC DRUMS AND 4 MAGNETIC TAPES WITH THE TOTAL STORAGE CAPACITY OF 4,131,072 NUMBERS. THE COMPUTER CAN PERFORM 20,000 OPERATIONS PER SECOND AND HAS A LIBRARY OF STANDARD PROGRAMS WHICH WERE COMPILES FOR M-20, BESM 3M, AND M 220 COMPUTERS.

UNCLASSIFIED

USSR UDC 530.12:531.18+538.3

ŻAYTSEV, G. A., SOLUNIN, A. M.

"On the Problem of the External Invariance of Maxwell Equations in a Space With a Medium"

V sb. Nekotor. differents. uravneniya mat. fiz. i teorii kolebaniy (Certain Differential Equations of Mathematical Physics and the Theory of Oscillations -- Collection of Works), Ivanovo, 1970, pp 91-97 (from RZh-Fizika, No 1, Jan 71, Abstract No 1B137)

Translation: The general Maxwell equations in the presence of electric and fictitious magnetic charges are described in the algebraic form:

$$\nabla\Phi = j. \qquad (1)$$

In the above expression $\nabla = e^{\alpha}\partial_{\alpha}$, where e^{α} are generating algebras of the 16th order A, related by the relationships:

$$1/2\,(e^{\alpha}e^{\beta}+e^{\beta}e^{\alpha}) = g^{\alpha\beta}e; \quad (\alpha, \beta = 1, 2, 3, 4),$$

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USSR

ZAYTSEV, G. A., SOLUNIN, A. M., Nekotor. differents. uravneniya mat. fiz. i teorii kolebaniy, Ivanovo, 1970, pp 91-97

The elements Φ and j from the algebra A are expressed in terms of the electromagnetic field tensor $F = 1/2F^{\alpha\beta}e_\alpha e_\beta$ and in terms of the 4-vector and 4-pseudovector electric and magnetic currents $j_{el} = j^\alpha_{el}e_\alpha$ and $j_{mag} = j^\alpha_{mag}e_\alpha$ by the formulas:

$$\Phi = p + F,\ p = p_1 e + p_2 i,\ i = e^1e^2e^3e^4;$$

$$-4\pi/c(j_{el} - ij_{mag}) = -\nabla p + j_1 - ij_2.$$

The Maxwell equations in form (1) are invariant relative to external transformations under which the coordinates of x^α do not change and Φ and j are multiplied on the right by the inverse elements from algebra A which are linear combinations of the products of an even number of generatrices e_α. For a space with a medium, it is proposed that the bound electric charges and currents be replaced by fictitious bound magnetic charges and currents leading to the same macroscopic characteristics of the medium. As a result, it becomes possible by an external transformation to give a new physical sense: namely, they convert free and bound electric charges and currents among themselves. G. A. Zaytsev.

2/2

UDC 539.21

USSR

ZAYTSEV, G. G., BARABANOV, V. N., and DEYEV, A. N., Moscow

"Study of the Elastic Properties of Carbon Materials During Heat Treatment"

Kiev, Problemy prochnosti, No 1, Jan 71, pp 110-113

Abstract: A study was made of a broad class of carbon formations used in the production of various types of artificial graphite. Heat-treated (annealed) carbon materials produced from two types of petroleum coke were studied. The method of study included isothermal holding at 1250, 1400, 1700, 2000, and 2500°C. The dependences of the change in the modulus of elasticity of the compositions during this subsequent heat treatment are presented. The relaxation times, values of activation energy, and changes in modulus of elasticity were determined during the isothermal holding. The concept of the dipoles of carbon atoms in various energy states is introduced. It is demonstrated that the activation energy for a change in modulus of elasticity during heat treatment can be explained as the energy of certain dipole-dipole transistions in the carbon structure.

USSR

UDC: 669.24

KRALINA, A. A., SMIRNOV, L. V., SAZONOVA, V. A. and ZAYTSEV, G. I., Institute of Physics of Metals, Ural Scientific Center, Academy of Sciences SSSR

"Substructure of Nickel Monocrystals Grown by the Czochralski Process"

Sverdlovsk, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 113-120

Abstract: The study concerns the substracture of nickel single crystals grown by the Czochralski method at 0.5-3.2 mm/min growth rates using seed crystals of various crystallographic orientations. X-ray diffraction analysis indicates three basic types of substructures: a) striped substructures with inclined boundaries along the direction of growth; b) branched substructures without explicit boundaries; c) substructures with boundaries twisted around the specimen's axis. It is shown that the formation of structures of one type or another depends on growth conditions, the basic factor being the crystallographic orientation of the direction of growth. The three types of substructures and their occurrence in crystals with specific types of crystal axis orientations are discussed. Analysis of

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USSR

KRALINA, A. A., et al, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 113-120

the etching patterns on both longitudinal and transverse cross sections of the monocrystals indicates the marked effect of the thermal conditions at the crystallization boundaries on the type of substructure formation in the process of growth. (8 illustrations, 10 bibliographic references).

2/2

USSR

UDC 534-8

AREF'YEV, I. M., ZAYTSEV, G. I., KRIVOKHIZHA, S. V., OZHOGIN, YA. P., SHREYNER, B. YA.

"Dispersion of the Velocity of Sound in Aniline-Nitrobenzene Solutions"

Kratk. soobshecheniya po fix. (Brief Communications on Physics), 1970, No 7, pp 37-41 (from RZh-Fizika, No 12(II), Dec 70, Abstract No 12Zh805)

Translation: The dispersion of sound in an aniline-nitrobenzene solution was investigated to observe its negative value, which is possible for associated solutions. At a temperature of 20°C the velocity of hypersound at a frequency of $5.5 \cdot 10^9$ Hz was determined in terms of the displacement of the Mandelstam-Brillouin components in the spectra of the thermal scattering of light which was excited by an He-Ne laser at an angle of 90°. The velocity of ultrasound was measured at a frequency of $2.8 \cdot 10^6$ Hz. It turned out that negative dispersion is absent in the solution. V. Ye. Gordeyev.

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USSR UDC:620.179.14

NURIYEV, F. N., ZAYTSEV, G. V., CHAROV, V. A.

"Device for Measurement of Thickness of Carbon-Free Steel"

Defektoskopiya, No. 3, 1970, pp. 80-85

Abstract: During production and heat treatment of steel products, a carbon-free layer is formed on their surface, which has considerably different physical properties from the main body of the steel. The primary difficulty in testing the thickness of this layer by electromagnetic methods is the presence of a large number of disturbing factors. The authors have developed a device to perform this task using a multiparametric vortex current method to eliminate most of the disturbing factors. Using this method, extraction of information concerning the parameter of interest is reduced to separation of the voltage increment at each of several operating frequencies and multiplication of this increment by a certain constant-factor, different for each frequency. Results of plant testing of the device are presented.

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UDC 539.214;539.374

USSR

BABICH, E. A., ZAYTSEV, G. Z.

"Analysis of Plastic Deformation Zones Under the Impression of Large Spheres Into Massive Plates"

V sb. Issled. i kontrol' mekhanich. svoystv materialov nerazrushayushch. metodami (Studies and the Control of Mechanical Properties of Materials by Nondestructive Methods -- Collection of Works), Volgograd, 1972, pp 30-34 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V479)

Translation: The rational parameters for the strengthening and dimensions of an instrument for the cold hardening of large-scale stamped plates of a powerful hydraulic press are calculated. It is established that the diameter of the sphere to strengthen a plate of thickness 500 mm can be taken as 100 mm to obtain the required depth of impression and the required degree of impression. The analytical relationship between the depth of impression and the diameter of the sphere as established from processing experimental data shows the essential possibility of obtaining a depth of impression of several tens of millimeters and a correspondingly powerful field of residual compressive stresses. This is of importance in reducing the residual deformation of stamping plates of hydraulic presses.

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1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--RUPTURE RESISTANCE OF STEELS SUBJECTED TO LOADING AT TWO DIFFERENT FREQUENCIES -U-

AUTHOR-(02)-ZAYTSEV, G.Z., FARADZHOV, R.M.

COUNTRY OF INFO--USSR

SOURCE--METALLOVEDENIE I TERM. OBRABOT. METALLOV, 1970, (2), 44-46

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CYCLIC FATIGUE LIFE, CHROMIUM NICKEL STEEL, RUPTURE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0137 STEP NO--UR/0129/70/000/002/0044/0046

CIRC ACCESSION NO--AP0123909

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123909

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FATIGUE CHARACTERISTICS OF C AND ALLOY (CR-NI) STEELS SUBJECTED TO TWO SIMULTANEOUS LOADS ACTING AT DIFFERENT FREQUENCIES WERE STUDIED. THE LOW CYCLE FATIGUE LIMIT FELL BY 85PERCENT IN THE PRESENCE OF AN H.F. LOAD OF SMALL AMPLITUDE (4 KG-MM PRIME2). HTERE WAS A LINEAR RELATIONSHIP BETWEEN THE FATIGUE LIMITS DETERMINED FOR INDEPENDENT AND COMBINED L.F. AND H. F. LOADS. IF THE AVERAGE LOAD VARIED WITH TIME AT A L.F. (A FEW CYCLES-MIN) AND WITH A SMALL AMPLITUDE (5 KG-MM PRIME2) THE FATIGUE LIMIT FELL BY A FACTOR OF 2.

UNCLASSIFIED

USSR

UDC: None.

TAKIBAYEV, Zh. S., BOOS, E. G., SAN'KO, L. A., MUKHORDOVA, T. I., MOSIYENKO, A. M., ZAYTSEV, K. G., and SHARAPOV, K. V., Institute of High-Energy Physics, Kazakhstan Academy of Sciences

"Studying Four-Beam pp-Interactions at pulses of 19.1 Gev/s"

Moscow, Yadernaya Fizika, vol 16, No 5, 1972, pp 974-982

Abstract: The purpose of the present paper is to study the general dynamic characteristics of secondary particles from four-beam proton-proton interactions, such as pulse and angle distributions, inelasticity, and correlation between nucleons, at primary pulses of 19.1 Gev/s. A comparison of the experimental and theoretical results is also made. The difference between the approach taken by the experiments of this paper and that of earlier work in the same direction is that the present paper takes into account information regarding the nature of the charged particles obtained by direct measurements of the ionization loss density. The experiments involved observations in a two-meter waveguide of a bubble chamber irradiated by protons with a pulse of 19.1 ± 0.1 Gev/s, in which 17,700 events were recorded and 11,000 interactions were

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USSR

UDC: None

TAKIBAYEV, Zh. S., et al, Yadernaya fizika, vol 16, No 5, 1972, pp 974-982

selected for measurement. A table is given of various methods of obtaining experimental data and the corresponding results. Comparison of the theoretical and experimental results indicates that the multiperipheral model on which the former is based shows closer agreement with the experimental distribution of inelastic pp interaction, depending on the number of secondary charged particles. The authors express their appreciation to the Committee on Track Chambers of CERN, workers in the Laboratory of Elementary Particles, the Division of Computer Techniques, and the Mathematical Physics Laboratory of the IFVE[Institute of High-Energy Physics] of the Kazakhstan Academy of Sciences, as well as the LVTA Laboratory of the Joint Institute of Nuclear Research.

2/2

USSR UDC 539.1.073/.074

SAN'KO, L. A., TAKIBAYEV, ZH. S., BOOS, E. G., VOLKOVA, O. I., MOSIYENKO A. M., ZAYTSEV, K. G., TEMIRALIYEV, T. T., and KHOLMETSKAYA, A. V., Institute of Nuclear Physics, Kazakh SSR Academy of Sciences, Alma-Ata

"Identification of Secondary Particles From the Ionization Losses in a Hydrogen Bubble Chamber"

Pribory i Tekh Eksper, No 4, 1971, pp 67-69

Abstract: The authors give the results of identifying secondary charged particles forming in the interactions of protons at an empulse of 10 GeV/sec in an 81-cm hydrogen bubble chamber. They show that by using the method of average length of discontinuities they can determine the nature of 30% of all positive particles in a certain range. Graphs are used to illustrate the authors' results. Figure 1 shows the relative error in determining as a function of track length. Figure 2 shows the ionization curves computed for various types of particles. Figure 3 shows the distribution of the points relative to the ionization curves for positive and negative particles. Analysis of the authors' results shows that the method described herein will allow identification of 90% of all the particles measured. The article contains 3 figures and 4 bibliographic entries.

1/1

USSR

UDC 621.643.001.2

ZAYTSEV, K. I., and ANUCHKIN, M. P.

"The Role of Deformation Fields at Spontaneous Crack Growth Along the Pipe Line"

Moscow, Stroitel'stvo Truboprovodov, No 7, Jul 73, pp 9-10

Abstract: A qualitative study is made of the mechanism of crack motion and the sources of the changing direction of its propagation, its branching and damping. The spontaneous breakdown is caused by an open crack; in front of the developing crack moves a field of elasto-plastic strain with a velocity equal to the propagation velocity of the crack. This field is in its way an indicator of the further crack development; by changing the character of the field, the character of the moving crack, as its turning or branching, can be influenced. In this way, the spontaneous longitudinal breakdown of pipe-lines can be localised by creation of special zones representing fields with lowered stresses or stresses with other sign than that of the field moving in front of the crack. By the control of this field, the development of cracks can be influenced and a spontaneous breakdown of the construction can be prevented to a considerable extent. Four figures.

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USSR

UDC 621.643.411.4

ZAYTSEV, K. I.

"The Mechanism of Formation of the Fused Layer in Pressure Contact Welding of Thermoplasts and its Effect on Welding Processes"

Moscow, Stroitel'stvo Turboprovodov, No 5, May 73, pp 14-16

Abstract: The process of pressure contact welding of thermoplasts was experimentally investigated on stratified specimens by a method developed by the author. From rheograms of macrocuts from welded specimens the flow mechanism of fusion on heating and upsetting was determined and a graph was plotted characterizing the change of parameters in the process of welded joint formation. Their analysis shows that, in order to produce a reliable joint, the thickness of the fused layer must increase with increasing thickness of the welded members. The experiments proved that, besides diffusion processes in the zone of contact, an intermixing of macrovolumes takes place during the formation of the welded joint. Two figures, ten bibliographic references.

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1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DETERMINATION OF THE COMPOSITION OF SOME PEROXO COMPOUNDS -U-

AUTHOR-(02)-ZAYTSEV, L.M., POSPELOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL KHIM. 1970, 25(2), 336-40

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC COMPLEX COMPOUND, CHEMICAL COMPOSITION, CHEMICAL ANALYSIS, HYDROXIDE, ORGANIC OXIDE

CONTROL MARKING--NO RESTRICTIONS

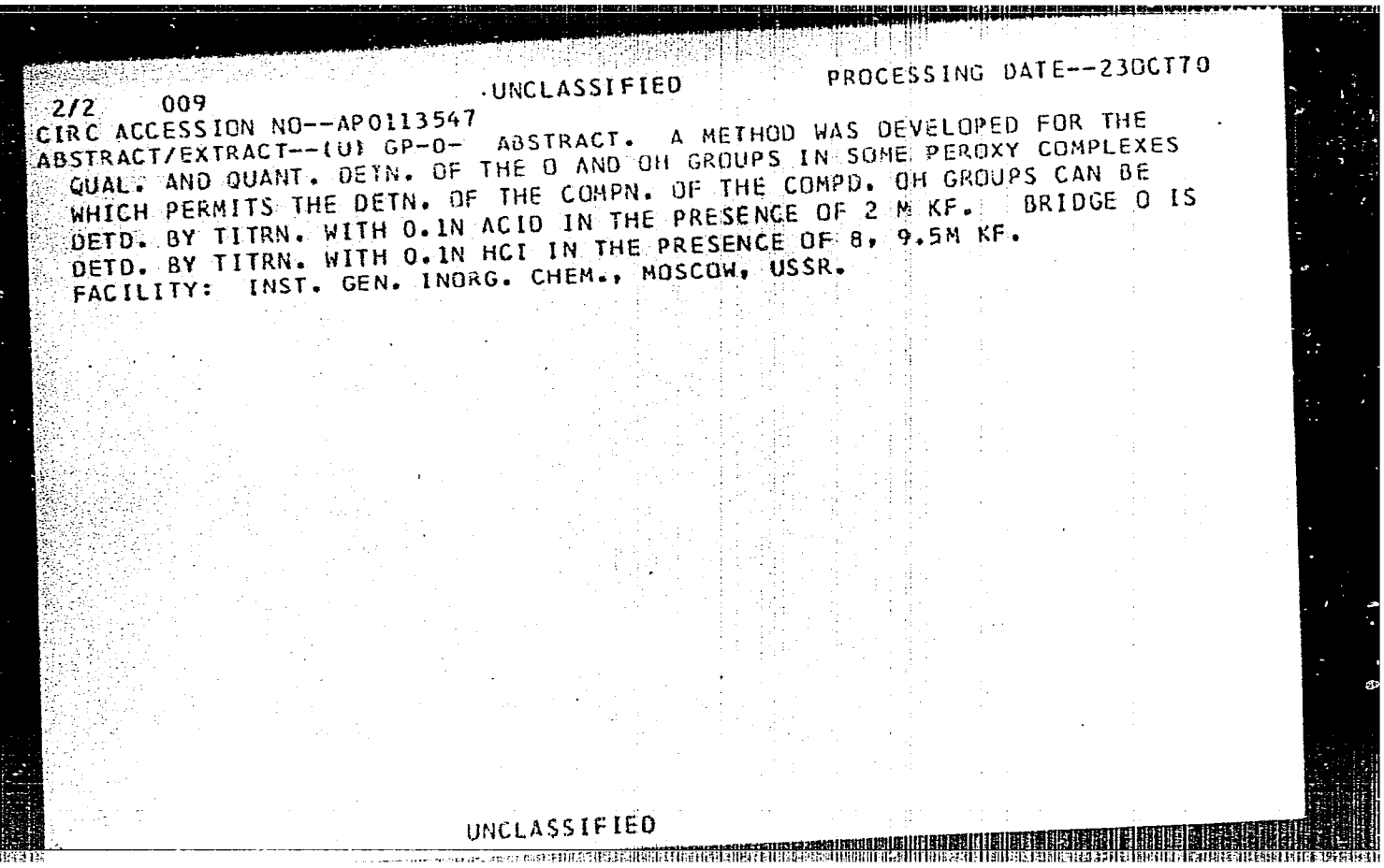
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0676 STEP NO--UR/0075/70/025/002/0336/0340

CIRC ACCESSION NO--AP0113547

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203730004-0"



UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 009

CIRC ACCESSION NO--AP0113547

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD WAS DEVELOPED FOR THE QUAL. AND QUANT. DETN. OF THE O AND OH GROUPS IN SOME PEROXY COMPLEXES WHICH PERMITS THE DETN. OF THE COMPN. OF THE COMPD. OH GROUPS CAN BE DETD. BY TITRN. WITH 0.1N ACID IN THE PRESENCE OF 2 M KF. BRIDGE O IS DETD. BY TITRN. WITH 0.1N HCI IN THE PRESENCE OF 8, 9.5M KF.

FACILITY: INST. GEN. INORG. CHEM., MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CHEMISTRY OF LONG LIFE FISSION PRODUCT ELEMENTS -U-

AUTHOR-(05)-SINITSYN, N.M., KORPUSOV, G.V., ZAYTSEV, L.M., LEVIN, V.I., SINITSYNA, S.M.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ATOMIZDAT, 1970, 324 PP

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NUCLEAR FUEL CYCLE, NUCLEAR FUEL REPROCESSING, FISSION PRODUCT, RADIOCHEMISTRY, MONOGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1422 STEP NO--UR/0000/70/000/000/0001/0324

CIRC ACCESSION NO--AM0121888
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AM0121888

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 3. INTRODUCTION 4. CHAPTER I TECHNOLOGY IN PROCESSING OF NUCLEAR FUEL 12. II CESIUM 49. III STRONTIUM 80. IV RARE EARTH ELEMENTS 111. V ZIRCONIUM AND NIOBIUM 180. VI RUTHENIUM 243. VII TECHNETIUM 282. VIII REPROCESSING OF WASTE WHICH CONTAINS FISSION PRODUCTS 296. THE BOOK DEALS WITH THE PRESENT STATE OF CHEMISTRY OF BASIC RADIOACTIVE LONG LIFE ELEMENTS FORMING DURING FISSION OF NUCLEAR FUEL. THE BOOK WAS WRITTEN FOR SCIENTISTS AND ENGINEERS WORKING IN THE FIELD OF RADIOCHEMICAL TECHNOLOGY. IT CAN BE RECOMMENDED ALSO AS A TEXTBOOK TO COLLEGE AND POST GRADUATE STUDENTS OF RADIOCHEMISTRY.

UNCLASSIFIED

USSR

UDC; 53.07/.08+53.001.5

ZAYTSEV, L. N., KOMOCHKOV, M. M., SYCHEV, B. S.

"Principles of Accelerator Shielding"

Osnovy zashchity uskoriteley (cf. English above), Atomizdat, 1971, 400 pp, ill. 2 r. 64 k. (from RZh-Fizika, No 4, Apr 72, Abstract No 4A532 K)

Translation: This is a book on the problems of calculating the parameters of designing , and utilizing accelerator shielding. The book consists of ten chapters dealing with interactions between particles and matter, the propagation of radiation in matter, methods of calculating the shielding parameters, the types of radiation in accelerators, experimental studies of processes in shielding, induced radioactivity, composition of shielding and selection of materials, planning of buildings and shielding, and construction of shielding. V. P.

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USSR

UDC: 53.07/.08+53.001.5

ZAYTSEV, L. N., KIMEL', L. R., SEROV, A. Ya., SIDORIN, V. P.

"Recovery of Neutron Spectra Behind Accelerator Shielding"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 47-52 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A673)

Translation: The neutron spectrum was measured behind the shielding of a 10 GeV synchrophasotron with the aid of a Bonner counter -- a scintillation detector of boric anhydride and zinc sulfide alloy activated by silver and placed in spherical polyethylene moderators of various diameters. A procedure is developed for restoring the neutron spectrum from the results of Bonner counter measurements. The paper presents neutron spectra behind the shielding of the synchrophasotron at the Joint Institute for Nuclear Research which were reconstructed by the proposed method. All calculations on verifying the procedure and reconstruction of spectra were done on the BESM-6 computer. An analysis of the results shows that the neutron spectrum is approximated by a function of the form $1/E^n$ in various energy intervals, where

1/2

USSR

ZAYTSEV, L. N. et al., Vopr. dozimetrii i zashchity ot izluch., vyp. 12, Moscow, Atomizdat, 1971, pp 47-52

$$n = \begin{cases} 1.3\text{-}1.5 \text{ for } 10^{-1} < E < 10^{2} \text{ eV} \\ 0.9\text{-}1.1 \text{ for } 10^{2} < E < 10^{6} \text{ eV} \\ 0.5\text{-}0.4 \text{ for } 10^{6} < E < 10^{7} \text{ eV} \\ 1.8\text{-}2.0 \text{ for } 10^{7} < E < 6.3 \cdot 10^{7} \text{ eV} \end{cases}$$

The reconstructed spectra agree with neutron spectra previously measured with the aid of nuclear emulsions of the BYa-2 type with a thickness of 400 microns. M. L.

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UDC 621.791.16.037

USSR

KHOLOPOV, Yu. V., Candidate of Technical Sciences, ZAYTSEV, M. P., Candidate of Technical Sciences, SMIRNOV, A. S., Engineer, SOLDATENKOV, V. A., Engineer, and ERLIKH, M. G., Engineer VNIIESO (All-Union Scientific Research Institute of Electric Welding Equipment)

"The MTU-0.4-3 Machine for the Ultrasonic Welding of Metals"

Moscow, Svarochnoye Proizvodstvo, No 5, May 70, pp 47-48

Abstract: A description is given of the MTU-0.4-3 machine for the ultrasonic welding of metals. Exploitation of the machine under industrial conditions shows that it is simple and reliable in its operation. Wear-resistant welding tips may produce up to 61,000 spot welds before servicing, and up to 250,000 before being replaced. The use of the machine in the production of K50-6 and K50-7 aluminum electrolytic condensers resulted in a 14.5% reduction of rejects, and in increased welding reliability, greater service life of the article, and a 39% increase in labor productivity. Specifications of the machine are as follows:

Power in kw	0.4
Operational frequency in kc	22±7.5%

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USSR

KHOLOPOV, YU. V., et al, Svarochnoye Proizvodstvo, No 5, May 70, pp 47-48

Contact pressure in kg	8-60
Thickness of welded articles in mm	0.01-0.2
Productivity	15-90 spots per min.
Welding tip feeding in mm	120 x 47 or 120 x 74
Gap between tips in mm	0-20
Dimensions in mm	1300 x 600 x 1235

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1/2 018 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--NTU C.4-3 FOR ULTRASONIC METAL WELDING -U-

AUTHOR-(05)-KHCLOPOV, YU.V., ZAYTSEV, M.P., SMIRNOV, A.S., SOLDATENKOV, V.A., ERLIKH, M.G.

COUNTRY OF INFO--USSR, UNITED KINGDOM, UNITED STATES

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO. 5, 1970, PP 47-48

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PATENT, WELDING EQUIPMENT, FOREIGN TECHNICAL RELATION, ULTRASONIC WELDING, MACHINERY MANUFACTURING PLANT/(U)MTU04 3 ULTRASONIC WELDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/005041/B10 STEP NO--UR/0135/70/000/005/0047/0048

CIRC ACCESSION NO--AP0142720

UNCLASSIFIED

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0142720 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MACHINE FOR ULTRASONIC WELDING OF METALS CONSISTS OF AN ACOUSTICAL SECTION, USING A MECHANICALLY OSCILLATORY SYSTEM, THE WELDING HEAD, FIXED TO A TABLE, A HORIZONTAL DRIVE SERVO FOR THE ACOUSTICAL SECTION, A CONTACT PRESSURE SERVO, CONTROL EQUIPMENT FOR THE ENERGY FEED SOURCE, AND CONTROL PEDALS. THE ACOUSTICAL SECTION HAS A MAGNETOSTRICTIVE TRANSDUCER, A KNIFE EXPONENTIAL CONCENTRATOR, AND A RESONATING ROD OPERATING IN THE BENDING OSCILLATION MODE. A PHOTOGRAPH OF THE MACHINE IS GIVEN TOGETHER WITH FURTHER DETAILS OF ITS CONSTRUCTION, AND A CROSS SECTIONAL DIAGRAM OF THE ACOUSTICAL SECTION IS PRESENTED. OPERATION OF THE MACHINE UNDER PLANT CONDITIONS HAS SHOWN TAHT IT IS SIMPLE AND RELIABLE IN OPERATION. EXPERIMENTS WERE CONDUCTED ON THE MECHANICAL STABILITY OF WELDS MADE BY THE MACHINE IN THE COURSE OF FILM TRANSFORMER AND ELECTRICAL CAPACITOR MANUFACTURE; THE RESULTS OF THOSE EXPERIMENTS ARE GIVEN IN TABULAR FORM. ASSEMBLY LINE MANUFACTURE OF THE MTU 0.4-3 MACHINE HAS BEEN ORGANIZED IN THE "ELEKTROSVARKA" PLANT IN KALININGRAD. PATENTS HAVE BEEN OBTAINED FOR THE MACHINE IN GREAT BRITAIN AND THE UNITED STATES.

FACILITY: VNIIESO.

UNCLASSIFIED

USSR

UDC 533.697

ZAYTSEV, M. V.

"Study of the Effectiveness of 'Reverse' Twist Stages of Nozzle Blades"

Energ. mashinostroyeniye. Resp. mezhved. temat. nauch.-tekhn. sb. (Power Machine Building. Republic Interdepartmental Thematic Scientific-Technical Collection), 1971, No. 12, pp 7-12 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3B334)

Translation: The results of an experimental study of the effectiveness of stages with a constant reaction and ordinary cylindrical stages are given for three profiles of a nozzle grid TN-1, TN-2 and TN-4 and for various ratios l/b. In all types of profiles and relative lengths of the nozzle grids used the efficiencies of the stages with "reverse" twist were higher than the efficiencies of stages with cylindrical blades over a wide range of variation in distances and gaps determining leakage into the space above the band. 5 ref. Author's abstract.

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USSR

ZAYTSEV, N. G., ZELENSKIY, V. S.

"Representation and Coding of Data with Verbal Significance"

Kibernet. i Vychsil. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1971, No 12, pp 97-100 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V654, by the authors).

Translation: Methodological statements are developed on the representation and coding of data with verbal significance for use in data processing systems.

USSR

ZAYTSEV, N. G.

"Composition of Standard Subroutines for Formation and Processing of Files of Data"

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Technology. Republic Interdepartmental Collection], 1971, No 12, pp 86-97 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V655, by the author).

Translation: The composition of standard subroutines for operation with data files is defined. The technical tasks are outlined, and an algorithm for the operation of these subroutines is defined, allowing them to be programmed. Although the technical tasks for the subroutines are developed as applicable to the Minsk-22 computer, they are rather general and can be used for programming of all types of machines.

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USSR

UDC: 8.74

ZAYTSEV, N. G., KHLEBNIKOV, A. G., KOROBANOV, M. I.

"Organizing Communication Between the 'Minsk-22' Digital Computer and Subscribers by Means of a Computer-Controlled Automatic Commutator"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1971, vyp. 12, pp 64-70 (from RZh-Kibernetika, No 5, May 73, abstract No 5V753 by the authors)

Translation: The paper describes the block diagram and schematic of a commutator used as a basis for creating teletype communications between the "Minsk-22" digital computer and 20 subscribers served in sequence by the computer.

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USSR

UDC: 8.74

KIRILYUK, N. I., KVASOV, V. M., ZAYTSEV, N. G., SIRCHENKO, A. G., SOKOLOV, V. K., KHRAMOV, G. V.

"Structure and Composition of the Set of Technical Facilities of a Typical Automated Control System"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1971, vyp. 12, pp 41-54 (from RZh-Kibernetika, No 5, May 73, abstract No 5V772 by the authors)

Translation: The paper deals with problems of selecting the technical complex of a typical automated enterprise management system which are of interest in the development and introduction of control systems.

1/1

USSR

UDC: 8.74

ZAYTSEV, N. G.

"Basic Principles on Formation and Operation With Data Blocks of a System"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1971, vyp. 12, pp 78-86 (from RZh-Kibernetika, No 5, May 73, abstract No 5V775 by the author)

Translation: The paper defines the principal elements of data blocks, the form of data representation, requirements for documents, representation of data in the machine, introduction of changes and additions, checking the correctness of data, and preparation of sub-blocks for solving problems in an automated control system.

1/1

UDC: 8.74

USSR

DATSENKO, V. P., ZAYTSEV, N. G.

"General Characteristic of Problems of Data Transmission in Automated Systems of Enterprise Management"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1971, vyp. 12, pp 54-64 (from RZh-Kibernetika, No 5, May 73, abstract No 5V774 by the authors)

Translation: The paper defines the structure, makeup of equipment, operating criteria and basic factors on which a data transmission system depends. A diagram is presented for structural classification of the elements of a data transmission system.

1/1

USSR UDC: 681.3.06:51

ZAYTSEV, N. G.

"Software for a Standard Automatic Production Control System Based on the 'Minsk-22' Digital Computer"

Matematicheskoye obespecheniye tipovoy ASUP na baze TsVM "Minsk-22". Resp. fond algoritmov i programm. In-t kibernet. AN USSR (cf. English above. Republic Data Bank of Algorithms and Programs. Institute of Cybernetics. Academy of Sciences of the UkrSSR), Kiev, 1971, 171 pp, ill. 50 k. Mimeo. (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V947 K)

Translation: The book contains subprograms of the second part of the library of subprograms which makes up the software of a typical automatic production control system. The subprograms given in the book are used for preparing, ordering and processing data blocks, and also for data printout in the form of documents. The book contains the following sections: I. Organizing Work With Magnetic Tapes; II. Subprograms for Work With Records and Data Blocks; III. Subprograms for Search and Sampling of Necessary Data; IV. Subprograms for Sorting Data Blocks; V. Subprograms for Printout of Records and Data Blocks. V. Mikheyev.

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USSR

UDC 621.382.2

STAROSTIN, V. V., ZAYTSEV, N. S.

"Film Diodes on a Base of Solid Solutions of $Zn_xCd_{1-x}Se$"

Moscow, Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. (Apr 1970 g.) Sekts. Elektron. tekhniki. Podsekts. poluprovodnikovykh priborov (Reports on the Scientific-Technical Conference on the Results of Scientific-Research Work for 1968-1969. 1970. Electronic Technology Section, Semiconductor Devices Subsection), 1969, pp 59-63 (from RZh -- Elektronika i yeye primeneniye, No 2, Feb 70, Abstract No 2B148)

Abstract: The statistical and dynamic voltage-current characteristic (VCC) are investigated of film diodes with various proportions of the components entering into the composition of the material. The VCC with the maximum rectification factor matches the composition $Zn_{0,23}Cd_{0,77}Se$. It is established that the form of the forward branch of the VCC corresponds qualitatively with the theory of currents, limited to a space charge with one type of carriers. 2 ill. 7 ref. Ye. Sh.

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USSR

UDC 539.621

ZAYTSEV, O.V. and NAZARENKO, P.V.

"External Friction Upon Change From Static to Kinetic"

Moscow, Mashinovedeniye, No 3, May-Jun 71, pp 76-80

Abstract: The conclusions of a polarized-light-refraction analysis of microscopic frictional phenomena in NaCl crystals under normal and tangential forces are as follows. Formation of frictional forces occurs in close relation to elastic-plastic deformation of surface layers. Static friction in the contact zone is manifested primarily in elastic-plastic compressive deformation localized in a relatively thin layer which decrease sharply with depth. The change from static friction to kinetic friction is characterized by a sharp increase to a maximum compressive deformation level at contact followed by a jumpwise decrease to a relatively low level. A sharp decrease in compressive deformation occurs during contact followed by a buildup of tensile deformation to a maximum at the start of kinetic friction. This then decreased jumpwise. The jumpwise change in frictional force depends upon an analogous change in elastic-plastic deformations in the contact zone.

1/1

USSR

UDC 627.842:624.191.8.001.57

ZAYTSEV, P. A.

"Model Studies of Joint Operation of Forks of Pressure Water Lines with the Rock Massif"

Energ. str-vo--V sb (Power Engineering Construction -- Collection or Works), No 10 (112) Moscow, 1970, pp 86-88 (from RZh-Elektrotekhnika i Energetika, No 2 Feb 71, Abstract No 2 D166)

Translation: This article contains a description of model studies of the joint operation of a steel lining with the rock massif by the photoelasticity method. Recommendations are made with respect to decreasing the thickness of the metal lining calculated considering the elastic resistance of the rock. There are 3 illustrations, 1 table and a 3-entry bibliography.

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UDC 621.372.8.049.75-416

USSR

DRITOV, L. A., ZAYTSEV, P. P., LISENKO, G. A.

"Calculating the Spectrum of the Eigenvalues of Waveguide Types of Oscillations of a Microstrip Line"

Tr. Ul'yanovsk. politekhn. in-ta (Works of Ul'yanovsk Polytechnic Institute), Vol 6, No 3, 1971, pp 169-175 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10B116)

Translation: A study is made of a line comprising an external screen of rectangular shape, a dielectric substrate and a central conductor of finite thickness. A EH type wave is propagated in the line. The spectrum of the eignevalues of the electromagnetic oscillations in this line is calculated by means of the approximate method of eigenfunctions. It is proposed that the metal conductors of the line have infinite conductivity. The line is divided into four regions for each of which the wave equations are solved. The relations are obtained by means of which it is possible to calculate microstrip lines with a rectangular cross section of the internal and external conductors on a computer. It is noted that the calculation precision depends on the order of the determinant of the system of equations. The H-type and E-type waveguides are a special case of the system of equations obtained. There is

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USSR

DRITOV, L. A., et al., Tr. Ul'yanovsk. politekhn. in-ta, Vol 6, No 3, 1971, pp 169-175

a possibility of studying the effect of the manufacturing precision (symmetry of the line design) on the critical frequency. There is 1 illustration and a 3-entry bibliography.

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USSR

UDC 621.372.8.049.75-416

DRITOV, L. A., ZAYTSEV, P. P.

"Sinusoidal MicrostripLine with a Multilayered Semiconductor Substrate"

Tr. Ul'yanovsk. politekhn. in-ta (Works of Ul'yanovsk Polytechnic Institute), Vol 6, No 3, 1971, pp 176-184 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10B117)

Translation: The parameters of a microstripline the internal conductor of which is executed in the form of a sinusoid are calculated. The model of this line consists in a metallic screen rectangular in cross section and an n-layer semiconductor substrate. For generality of statement of the problem it is proposed that each layer of the substrate has arbitrary values of the specific conductivity, the dielectric constant and the magnetic permeability. An analysis is performed by means of the quasistationary theory of transmission lines; only a TEM wave is propagated in the line. As a result of solving the boundary problems of the Laplace-Poisson equation, relations are obtained for determining the primary (running capacitance, inductance and leakage conductance of the layers) and secondary (complex wave impedance, damping coefficient, delay time and wavelength shortening factor) parameters of the sinusoidal microstriplines. An

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USSR

DRITOV, L. A., et al., Tr. Ul'yanovsk. politekhn. in-ta, Vol 6, No 3, 1971, pp 176-184

engineering procedure is presented for calculating the parameters of a five-layer sinuscidal microstripline. There are 2 illustrations and a 5-entry bibliography.

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USSR

UDC 621.372.8.049.75-416

DRITOV, L. A., ZAYTSEV, P. P.

"Theory and Calculation of a Five-Layer Superhigh Frequency Shielded Microstrip Line"

Tr. Ul'yanovsk. politekhn. in-ta (Works of Ul'yanovsk Polytechnic Institute), Vol 6, No 3, 1971, pp 205-214 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10B120)

Translation: A study was made of single conductor and connected shielded strip lines comprising an external metal sheathing of rectangular cross section which prevents emission of electromagnetic energy by the line and inside which the central conductors are laid in a layered structure. The layers of the line have the following purpose: the first layer is a plastic filler serving to seal the solid circuit; the second and third layers are insulating layers made of silicon dioxide required to manufacture the elements of the solid circuit, for example, the blocking capacitors; the third and fifth layers are insulating layers made of SiO_2 preventing modulation of the conductance and loss of the dielectric properties of the semiconductor crystal — the fourth layer. Under the assumption that a plane wave is propagated in the line, the secondary parameters of the line (complex wave impedance and propagation coefficient)

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USSR

DRITOV, L. A., et al., Tr. Ul'yanovsk. politekhn. in-ta, Vol 6, No 3, 1971, pp 205-214

were calculated for cases of cophasal and antiphase waves. The procedure used to calculate the geometric dimensions of the line is formulated. There are 3 illustrations and an 8-entry bibliography.

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USSR

UDC 621.372.8.049.75-416

LISENKO, G. A., DRITOV, L. A., ZAYTSEV, P. P., LEBEDEV, V. K., POVIKOV, O. N.

"Unshielded Bound Four-Layer Microstrip Line of Superhigh Frequency Integrated Circuits"

Tr. Ul'yanovsk. politekhn. in-ta (Works of Ul'yanovsk Polytechnic Institute), Vol 6, No 3, 1971, pp 193-199 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10B119)

Translation: A study was made of an unshielded band line comprising an external shield and central conductors of rectangular cross section arranged in a five-layer semiconductor substrate. The second, third and fifth layers are insulating layers which prevent modulation of the semiconductor conductivity; the first layer is a plastic filler. The primary parameters of the line (linear capacitance, leakage conductance and inductance) were calculated. The calculation was performed for cophasal and antiphase waves. There is 1 illustration and a 12-entry bibliography.

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USSR

UDC: None

ZAYTSEV, R. O.

"Phase Transitions in Ferroelectric Solid Solutions"

Leningrad, Fizika Tverdogo Tela, No 6, 1973, pp 1874-1882

Abstract: This paper studies phase transitions in isovalent solid solutions in which the Coulomb part of the interaction is independent of the type of cell and the angular compensation is independent of the concentration. Under these assumptions, the electron polarization need not be taken into account, and the model of coarse ions can be considered as effective charges which satisfy the neutrality condition. The question of compensation condition violation is ignored. The model considered is of the Slater type, in which the Hamiltonian of the ferroactive ions has two parts. An expression is obtained for the free energy in terms of the spontaneous polarization; this has the form of the Ginzburg-Devonshire expansion with coefficients depending on the concentration. Expressions are obtained for the dielectric susceptance below and above the phase transition temperature. Solid solutions of the $K(H_{1-x}D_x)_2PO_4$ type are investigated and the Curie-Weiss constant is obtained. The author thanks A. P. Levanyuk and V. G. Vaks for their comments.

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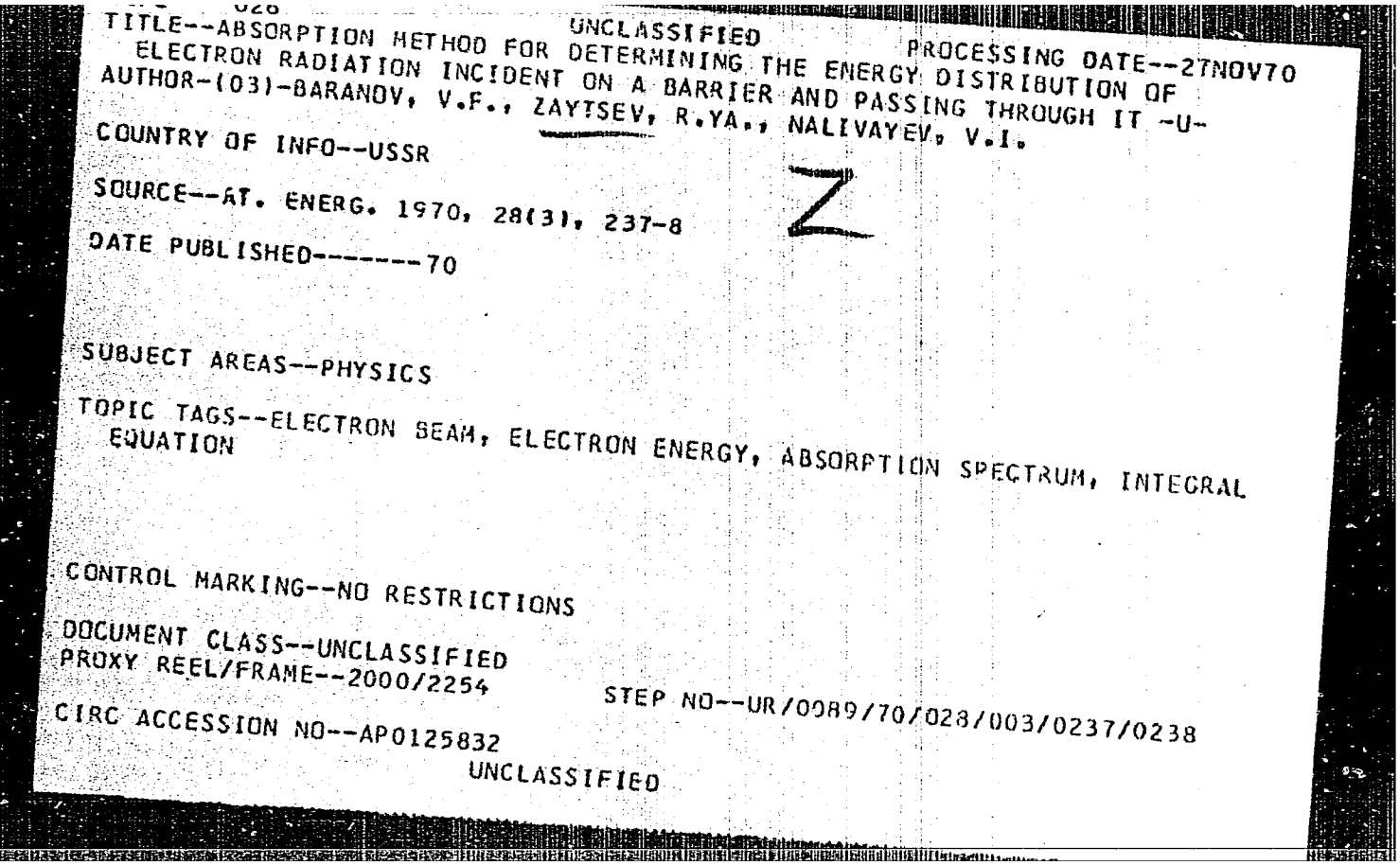

028 UNCLASSIFIED

TITLE--ABSORPTION METHOD FOR DETERMINING THE ENERGY DISTRIBUTION OF ELECTRON RADIATION INCIDENT ON A BARRIER AND PASSING THROUGH IT -U-

PROCESSING DATE--27NOV70

AUTHOR-(03)-BARANOV, V.F., ZAYTSEV, R.YA., NALIVAYEV, V.I.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(3), 237-8

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON BEAM, ELECTRON ENERGY, ABSORPTION SPECTRUM, INTEGRAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2254

STEP NO--UR/0089/70/028/003/0237/0238

CIRC ACCESSION NO--AP0125832

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125832

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY DISTRIBUTION OF E INCIDENT ON A BARRIER AFTER PASSING THROUGH A BARRIER OF FINITE THICKNESS CAN BE CALCD. WITH A FAIR DEGREE OF ACCURACY IF ONE KNOWS THE FUNCTION DESCRIBING THE ATTENUATION OF A RADIATION BEAM WITH A CONTINUOUS SPECTRUM IN BARRIERS OF DIFFERENT THICKNESSES AND THE FUNCTION DESCRIBING THE ATTENUATION OF MONOENERGETIC E. A SERIES OF APPROX. EXPRESSIONS FOR THOSE FUNCTIONS, AND THE CORRESPONDING SOLNS. OF INTEGRAL EQUATIONS FOR THE E ENERGY DISTRIBUTION ARE PRESENTED.

UNCLASSIFIED

USSR

UDC: 621.391.821

REMIZOV, L. T. and ZAYTSEV, S. A.

"Observation of Weak Changes in the Field Intensity of Atmospheric Interference at Ultra-Low Frequencies"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 8, 1970, pp 1563-1567

Abstract: The authors use the Student statistical criterion for verifying the presence of weak changes in the field intensity of atmospheric interference at individual frequency sections of the ultra-low frequency range in a small time scale. The results show that there are noticeable changes in the power of an atmospheric interference field at 300, 400, and 800 cps and approximately at the same degree at all frequencies. Physically, in comparison to the 3-40 cps range, these variations can be explained by the effect of the pulse component of the interference field at these frequencies. Time heterogeneities exist at all frequencies if the scale exceeds 9 seconds. Original article: two tables, six formulas, and four bibliographic entries.

1/1

USSR

DANIELYAN, E. A., DIMITROV, B. N., ZAYTSEV, V. A.

"Behavior of Characteristics of Queueing Systems for High Values of a Parameter"

Sb. Rabot. Vychisl. Tsentra Mosk. Un-ta [Collected Works of Moscow University Computer Center], 1972, Vol 18, pp 31-54 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V90 by I. Kovalenko).

Translation: A one-line queueing system is studied, with several priority classes, absolute priority and preservicing of requests. Suppose $W_k(t)$ is the distribution function of servicing time of a request from the k-th priority class, $\Pi_{k-1}(t)$ is the busy interval of the queueing system for requests with priorities over k. Under certain analytic conditions, the asymptote of both functions is found where $t \to \infty$.

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USSR

UDC 621.318.13:621.372.85

BEZMATERNYKH, L. N., SHVARTSMAN, G. I., MASHCHENKO, V. G., AFANAS'YEV, A. P., EOKOV, L. A., PROKHOPOV, A. P., ZAYTSEV, V. A., KUZHELEV, S. M.

"Controllable Delay Lines Based on Yttrium-Garnet Ferrite Rods"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. T. 2 (Thin Magnetic Films, Computer Technology and Radio Engineering--collection of works. Vol 2), Krasnoyarsk, 1971, pp 142-146 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11B190)

Translation: The paper presents the results of an experimental study on excitation and propagation of magnetoelastic and magnetostatic waves in yttrium-garnet ferrite rods as applied to their use in controllable delay lines. An analysis is made of relationships for delay time as a function of the external magnetic field when frequency is held constant, delay time as a function of frequency when the magnetic field is held constant, and total insertion losses as a function of delay time. The measurements were made in the frequency range of 560-3 800 MHz. Two illustrations, bibliography of eight titles. A. K.

1/1

USSR

UDC: 621.372.061

ZAYEZDNYY, A. M. and ZAYTSEV, V. A.

"Structural-Signal Parametric Filters and Their Use as Signal Dividers"

Moscow, Radiotekhnika, Vol. 26, No. 1, 1971, pp 26-36

Abstract: The structural-signal parametric filters are defined as linear circuits with variable parameters constructed such that their parameters are controlled by functions of time in which information concerning the structural characteristics of the input signal is concentrated; they are described by nonhomogeneous, linear differential equations with coefficients which depend on structural characteristics. The purpose of this paper is give a general approach to the synthesis of such filters of the second order according to the conditions of generalized resonance. Examples of such syntheses are given, and the results were checked experimentally. It is found that these experimental findings are in complete accord with the theoretical results. The authors express their faith in these filters as a means of improving the characteristics of communications and radar systems.

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USSR

UDC: 621.391.883.2

ZAYTSEV, V. A., KROPIVNITSKIY, A. D.

"Theoretical Study of the Effect of Interference on Structured Signal Parametric Filters"

V sb. Materialy Nauch.-tekhn. konf. Leningr. radiotekhn. in-t svyazi. Vyp. 1 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 1), Leningrad, 1971, pp 50-56 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A36)

Translation: The paper discusses passage of signals and interference through structured-signal parametric filters for FM and AM-FM waveforms and gives the calculation of their interference immunity. Resumé.

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USSR

UDC: 621.396.677.85

KUDRIN, A. A., ZAYTSEV, V. A.

"Quasioptical Properties of a Fresnel Zone Lens in the Microwave Band"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 4 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, Vyp. 4), Leningrad, 1971, pp 171-175 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B63)

Translation: A study is made of the focusing action of a Fresnel lens in the microwave band, and the magnification of the lens is determined. Two illustrations, three tables, bibliography of two titles. Resumé.

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UDC: 621.391.81

USSR

ZAYTSEV, V. A., KROPIVNITSKIY, A. D.

"Some Results of an Experimental Study of the Effect of Interference on a Structured-Signal Parametric Filter"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 1 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 1), Leningrad, 1971, pp 56-62 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A57)

Translation: The paper presents the results of an experimental study of a structured-signal parametric filter for FM signals. Transmission of spectrum-lumped and time-lumped jitter is considered. Experimental and theoretical results are compared. Resumé.

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1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ULTRASONIC EQUIPMENT FOR AUTOMATING PRODUCTION PROCESSES -U-

AUTHOR-(04)-VIGDERMAN, V.SH., ZAYTSEV, V.B., PUGER, M.A., SHKLYAREVICH, G.M.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, MEKHANIZATSIYA I AVTOMATIZATSIYA PROIZVODSTVA, NO 2, 1970, PP 13-16
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--EMULSION, FOOD TECHNOLOGY, FOOD PROCESSING EQUIPMENT, ULTRASONIC EFFECT/(U)AGB1 MACHINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1300 STEP NO--UR/0118/70/000/002/0013/0016

CIRC ACCESSION NO--AP0121804
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121804

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DESCRIPTION OF A MACHINE, THE AGB-1, USING ULTRASONICS FOR OBTAINING STABLE, HIGHLY DISPERSED WATERFAT EMULSIONS IN THE FOOD PRODUCE INDUSTRY IS GIVEN. THE MACHINE IS NOW IN ASSEMBLY LINE PRODUCTION. IT OPERATES ON THE PRINCIPLE OF THE PASSAGE UNDER PRESSURE OF THE MIXTURE THROUGH AN ACOUSTIC, MULTI ROD HYDRODYNAMIC CONVERTER. AS A RESULT OF THE TURBULENCE INDUCED BY THE ACOUSTIC OSCILLATIONS AND THE HYDRODYNAMIC SHOCKS, THE STABLE AND FINELY DISPERSED. THE FIRST SHOWING THE VARIOUS COMPONENTS AND THEIR INTERCONNECTION; THE SECOND, A SCHEMATIC OF THE ELECTRICAL CONNECTIONS; AND A THIRD, A LINE DRAWING OF THE EXTERNAL VIEW OF THE MACHINE FOR PREPARING THE EMULSION. THE LATTER HAS BEEN USED FOR SEVERAL YEARS IN CONFECTIONER PLANTS IN VARIOUS CITIES. ANOTHER DEVICE USING THE ULTRASONIC PRINCIPLE IS DISCUSSED IN THIS ARTICLE. THIS IS THE AKSH MACHINE FOR CLEANING JARS AND GLASSES. A THIRD MACHINE, FOR CLEANING FILTERS, IS KNOWN AS THE AMSH. THIS ULTRASONIC EQUIPMENT IS ALSO DESCRIBED IN THE TEXT AND IS SHOWN IN DIAGRAMMATIC FORM. ALL THESE DEVICES ARE MANUFACTURED BY THE VNIEKIPRODMASH, OF WHICH THE AUTHORS ARE EVIDENTLY MEMBERS. THIS ORGANIZATION HAS BEEN COLLABORATING WITH THE ACOUSTICAL INSTITUTE OF THE USSR ACADEMY OF SCIENCES IN THE DESIGN AND MANUFACTURE OF ULTRASONIC EQUIPMENT FOR WELDING POLYMER STRIPS USED IN FOOD PACKING. OTHER MACHINES IN THE PROCESS OF DEVELOPMENT ARE ULTRASONIC WELDING MACHINES FOR VACUUM PACKING FISH PRODUCTS AND DRIED MILK, AS WELL AS OTHER FOOD MATERIALS.

UNCLASSIFIED

USSR

UDC 621.7.022.6

VIGDERMAN, V. SH., ZAYTSEV, V. B., POGER, M. A., and SHKLYAREVICH, G. M.

"Ultrasonic Equipment for Automating Production Processes"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No2, 1970, pp 13-16

Abstract: A description of a machine, the AGB-1, using ultrasonics for obtaining stable, highly dispersed waterfat emulsions in the food produce industry is given. The machine is now in assembly-line production. It operates on the principle of the passage under pressure of the mixture through an acoustic, multi-rod hydrodynamic converter. As a result of the turbulence induced by the acoustic oscillations and the hydrodynamic shocks, the stable and finely dispersed: the first showing the various components and their interconnection; the second, a schematic of the electrical connections; and a third, a line drawing of the external view of the machine for preparing the emulsion. The latter has been used for several years in confectioner plants in various cities. Another device using the ultrasonic principle is discussed in this article. This is the AKSh machine for cleaning jars 1/2

USSR

VIGDERMAN, V. SH., et al., Moscow, Nekhanizatsiya i Avtomatizatsiya Proizvodstva, No 2, 1970, pp 13-16

and glasses. A third machine, for cleaning filters, is known as the AMSh. This ultrasonic equipment is also described in the text and is shown in diagrammatic form. All these devices are manufactured by the VNIEKIProdmash, of which the authors are evidently members. This organization has been collaborating with the Acoustical Institute of the USSR Academy of Sciences in the design and manufacture of ultrasonic equipment for welding polymer strips used in food packing. Other machines in the process of development are ultrasonic welding machines for vacuum-packing fish products and dried milk, as well as other food materials.

2/2

USSR UDC 8.74

ZAYTSEV, V. G., TIMOFEYEV, B. B.

"Organization of Graphic Dialog with a Computer"

V sb. Prom. kibernetika (Industrial Cybernetics -- collection of works), Kiev, 1971, pp 289-298 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V619)

No abstract

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UDC 8.74

USSR

ZAYTSEV, V. G.

"Representation of Data in the Graphical Relation System"

V sb. Prom. kibernetika (Industrial Cybernetics — collection of works), Kiev, 1971, pp 268-278 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V620)

No abstract

1/1

F. Mathematical Problems of Semiotics

USSR

BOBROV, A. I. and ZAYTSEV, V. G.

"Algorithm for Automatic Composition of Tables for Resolution of Homonymies (Lexico-Gramatical and Lexical)"

Tr. NII Upravl. Mashin i Sistem [Works of Scientific Research Institute for Control Machines and System], 1973, No 7, pp 163-170 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V818).

Translation: An algorithm is suggested for automatic composition of tables for the resolution of homonymies (lexico-gramatical and lexical), in which the length of the surroundings of the homonym, necessary for elimination of the ambiguity of the word, the grammatical information and its nature are selected in the row being analyzed from the table of configurations composed for each type of homonym. The configurations are basically a chain of valances of a given homonym, partially compensating for the lack of a syntactical analyzer at the present stage of development.

Authors' view

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USSR

UDC: 681.3.06:51

ZAYTSEV, V. G., IVANOV, P. P., FALKOV, F. B.

"Principles of Compiling a Sector-Wide Descriptive Dictionary"

Tr. NII upravl. mashin i sistem (Works of the Scientific Research Institute of Control Computers and Systems), 1971, vyp. 5, pp 191-196 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V932)

Translation: The authors consider the problem of making up a sector-wide descriptive dictionary by merging existing narrow-area glossaries. The requirements to be met by the dictionary are enumerated. In particular, it is pointed out that synonymous key words in the dictionary are united by denotation of communality of meanings into classes of conditional equivalence, each of these classes being designated by a symbol -- a descriptor. If the word has no symbols, then it forms an individual class. The dictionary has its own system of reference tags, whose functions and meaning are taken up in detail in this paper. Two forms of merging narrow-area glossaries are proposed, and recommendations are given on using each form. A detailed analysis is given of a method of compiling a sector-wide dictionary based on narrow-area glossaries of base organizations and

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ZAYTSEV, V. G., et al., Tr. NII upravl. mashin i sistem, 1971, vyp. 5, pp 191-196

a card catalog of terminology usage. In conclusion, the general characteristics of the sector-wide descriptive dictionary are given and methods of using it are indicated. T. Sidorova.

2/2

USSR UDC 681.327

ZAYTSEV, V. G.

"The Structure of an Alphanumeric Indicator for Data Collection and Display Systems"

Sistemy i Sredstva Avtomat. Upr. [Automatic Control Systems and Equipment -- Collection of Works], Kiev, 1970, pp 367-373 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B521 by VD).

Translation: A method is studied for using an alphanumeric indicator for automatic storage and display of information on a CRT screen. A simple method is suggested for organizing the accumulation of data, the necessary volume is estimated, and means for automatic distribution of memory are indicated as applicable to the changing characteristics of the information collection system. The structural composition and modes of operation of the display device are determined. 2 figs, 3 biblio refs.

1/1

USSR UDC 539.3

GALKIN, A. A., Academician Ukrainian Academy of Sciences, TOKIY, V. V.; ZAYTSEV, V. I.

"Effect of Comprehensive Hydrostatic Pressure on the Interaction of Dislocations"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 2, 1972, pp 313-315

Abstract: Earlier papers on this subject of the effect of hydrostatic pressure on dislocations have taken contradictory views, and it is with the intent of reconciling them that the authors of the present paper have investigated the matter. They begin their analysis with an equation for the potential energy of the body under pressure, and they view this quantity energy, as the sum of the characteristic dislocation energies and the deformation field plus the sum of the dislocation energies and the energy causing the deformation field. From the formulas derived in this theoretical article, they find that the pressure increases the interaction between the dislocations and activates the processes which annihilate dislocations of opposite sign. It is noted that their theoretical results agree closely with the experimental results. The authors are connected with the Donetsk Physico-Technical Institute.

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1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ELECTRICAL PROPERTIES, THERMAL CONDUCTIVITY, AND WIDTH OF THE FORBIDDEN BAND FOR MG SUB2 SN AT HIGH TEMPERATURES -U-
AUTHOR-(02)-ZAYTSEV, V.K., NIKITIN, YE.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2), 357-61

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--MAGNESIUM COMPOUND, TIN ALLOY, INTERMETALLIC COMPOUND, THERMAL CONDUCTIVITY, FORBIDDEN BAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0132 STEP NO--UR/0181/70/012/002/0357/0361

CIRC ACCESSION NO--AP0054928
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054928

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ATTEMPT WAS MADE TO DET. THE TEMP. DEPENDENCE OF THE WIDTH OF THE FORBIDDEN BAND IN MG SUB2 SN FROM ELEC. AND THERMAL MEASUREMENTS. TEMP. DEPENDENCES WERE STUDIED OF SP. ELEC. RESISTANCE, THERMAL EMF., THERMAL COND., AND THE HALL COEFF. FOR P- AND N-TYPE MG SUB2 SN 80-800DEGREESK. AT 550-800DEGREESK, THE WIDTH OF THE FORBIDDEN BAND VARIES LINEARLY WITH TEMP. THE TEMP. COEFF. OF THE WIDTH OF THE FORBIDDEN BAND IN THIS TEMP. INTERVAL IS MINUS 4.4 TIMES 10 PRIME NEGATIVE4 EV-DEGREE. AT TEMPS. CLOSE TO 800DEGREESK, THE ENERGY GAP BETWEEN THE VALANCE BAND AND THE CONDUCTION BAND IS CLOSE TO ZERO.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 026

TITLE--X RAY DIFFRACTION STUDY OF DERIVATIVES OF TRYPSIN INHIBITED BY DIISOPROPYL FLUOROPHOSPHATE -U-

AUTHOR-(05)-VAYNSHTEYN, B.K., ARUTYUNYAN, E.G., ZAYTSEV, V.N., KURANOVA, I.P., GREBENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 167-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRYPSIN, PLATINUM COMPOUND, MERCURY COMPOUND, ENZYME ACTIVITY, INHIBITION, FLUORINATED ORGANIC COMPOUND, ORGANIC PHOSPHORUS COMPOUND, X RAY DIFFRACTION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0070/70/015/001/0167/0168

PROXY REEL/FRAME--1997/0223

CIRC ACCESSION NO--AP0119219

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 026
CIRC ACCESSION NO--AP0119219
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PT AND HG DERIVS. OF TRYPSIN WERE PREPD. BY THE DIFFUSION METHOD, AND THE COORDINATES OF THE PT AND HG ATOMS IN THE CRYSTALS WERE DETD. BY X RAY DIFFRACTION. THE UNIT CELL PARAMETERS ARE A 58.65 PLUS OR MINUS 0.01, B 67.05 PLUS OR MINUS 0.01, AND C EQUALS 54.75 PLUS OR MINUS 0.02 ANGSTROM FOR THE PT DERIV. AND A 58.58 PLUS OR MINUS 0.02, B 67.42 PLUS OR MINUS 0.02, AND C 54.75 PLUS OR MINUS 0.02 ANGSTROM FOR THE HG DERIV. THE MAX. DEVIATIONS FROM THE PARAMETERS OF THE INITIAL TRYPSIN UNIT ALL WERE 0.34 AND 0.06 ANGSTROM FOR THE PT AND HG DERIVS., RESP. THE COORDINATES OF THE HG ATOM WERE DETD. TO BE X EQUALS 0.962, Y EQUALS 0.035, AND Z EQUALS 0.195. FOR PT, HOWEVER, CALCNS. YIELDED 2 VARIATIONS OF THE COORDINATES.
FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PREPARATION OF STEREOREGULAR SYNTHETIC RUBBERS -U-

AUTHOR-(05)-LYAKUMOVICH, A.G., KONSTANDI, B.V., SULTANOVA, M.KH., ZAYTSEV, V.S., IRKHIN, V.L.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 236,002

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--04FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CONJUGATED POLYMER, SYNTHETIC RUBER, POLYISOPRENE, PARAMAGNETISM, TITANIUM CHLORIDE, ORGANOALUMINUM COMPOUND, ELECTROMAGNETIC FIELD, POLYMERIZATION, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1443 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128842

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 033

CIRC ACCESSION NO--AA0128842

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEREOREGULAR SYNTHETIC RUBBERS WERE OBTAINED BY POLYMG. CONJUGATED DIENES, SUCH AS ISOPRENE, IN CATALYTIC SYSTEMS CONTG. SUCH PARAMAGNETIC COMPONENTS AS TICL SUB4 AND ISO BU SUB3 AL. TO INCREASE THE NO. OF CIS,1,4 UNITS AND TO IMPROVE THE PROPERTIES, POLYMN. WAS DONE IN A VARIABLE OR CONST. ELECTROMAGNETIC FIELD.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CN PRINCIPLES UNDERLYING SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS -U-

AUTHOR-(04)-SHALIMOV, A.A., SAYENKO, V.F., ZAYTSEV, V.T., DALAVURAK, V.P.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 6, PP 23-28

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, DUODENUM, DIGESTIVE SYSTEM DISEASE, SECRETION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1770 STEP NO--UR/0531/70/000/000/0023/0028

CIRC ACCESSION NO--AP0129138

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129138

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BOTH CLASSICAL GASTRIC RESECTION AND VAGOTOMY WITH DRAINAGE OPERATIONS OR WITH ANTRUMECTOMY ACCORDING TO RIGIDLY SUBSTANTIATED INDICATIONS SHOULD BE EMPLOYED IN SURGICAL TREATMENT OF PEPTIC ULCER. CLASSICAL RESECTION IS DONE IN THE ABSENCE OF DISTURBANCES IN THE FIRST PHASE OF GASTRIC SECRETION AND WITH AN ELEVATED OR NORMAL SECOND PHASE. SELECTIVE VAGOTOMY WITH ANTRUMECTOMY IS INDICATED IN HYPERSECTION BOTH DURING THE FIRST AND SECOND PHASES OF GASTRIC SECRETION. SELECTIVE VAGOTOMY WITH DRAINAGE OPERATION IS PERFORMED IN HYPERSECTION DURING THE FIRST STAGE OF SECRETION. THE RESTORATIVE STAGE OF THE OPERATION IS REALIZED WITH DUE ACCOUNT FOR PREDISOSITION TO THE DUMPING SYNDROME. FROM 1966 UP TO JULY 1968 A TOTAL OF 181 OPERATIONS FOR PEPTIC ULCER WERE PERFORMED. IMMEDIATE AND LATE RESULTS OF THE SURGERY PROVED SATISFACTORY. FACILITY: NII OBSHCHEY I NEOTLOZHNOY KHRURGII, KHAR'KOV. .

UNCLASSIFIED

UDC: 621.373.421(088.8)

USSR

ZAYTSEV, V. V.

"A Sweep Generator With Automatic Stabilization of the Output Power"

USSR Author's Certificate No 266859, filed 7 May 67, published 15 Jul 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A102 P)

Translation: This Author's Certificate introduces a sweep generator with automatic stabilization of the output power. The device contains a power level regulator, amplitude detector, and DC amplifier. The amplitude detector is connected to the output of the generator. As a distinguishing feature of the patent, the stabilization precision of the generator is improved by using an additional self-regulating circuit which contains a bolometric detector and a DC amplifier and which is connected through an adder to the above-mentioned regulator, and a high-frequency filter is connected in the main self-regulation circuit between the amplitude detector and the additional amplifier. E. L.

1/1

USSR UDC 669.017.1:621.771.8

ALEXANDROV, L. V., BYKOV, A. A., YAKSHINA, O. K., and ZAYTSEV, V. V.

"Properties of a Three-Layer Strip Produced by Explosion and Packet Rolling"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 160-163

Translation: Results are presented from comparative studies of the quality of bimetal produced by explosive welding and by packet rolling. The strength characteristics of a three-layer strip nickel + steel + nickel, produced by explosive welding, are found to be of the level of properties of a three-layer strip produced by packet rolling. The shear resistance between layers in the explosively welded bimetallic strip is 300-400 Mn/m^2 (30-40 Kg/mm^2). Estimation of the microstructure of the bimetal in the initial state (after explosion) and after hot rolling confirms the good adhesion of the nickel layers to the base layer. 3 figures.

1/1

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ON THE THEORY OF TYPE III SOLAR RADIO EMISSION BURSTS -U-

AUTHOR-(02)-ZHELEZNYAKOV, V.V., ZAYTSEV, V.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ASTRONOMICHESKIY ZHURNAL, VOL 47, NO 2, 1970, PP 308-321

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, PHYSICS

TOPIC TAGS--SOLAR RADIO EMISSION, SOLAR RADIATION BURST, PLASMA WAVE,
ELECTROMAGNETIC WAVE, RALEIGH SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1397 STEP NO--UR/0033/70/047/002/0308/0321

CIRC ACCESSION NO--AP0125043

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125043

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS IS THE SECOND PART OF THIS STUDY OF TYPE III SOLAR RADIO BURSTS (PART I: ASTRON. ZH., 47, 60, 1970). THE PAPER GIVES AN ANALYSIS OF THE EFFECTS OF CONVERSION OF THE ENERGY OF PLASMA WAVES GENERATED BY A FLUX OF FAST ELECTRONS TO THE RADIO EMISSION OF THE FUNDAMENTAL TONE AND SECOND HARMONIC OF TYPE III BURSTS. EMISSION OF THE FUNDAMENTAL TONE IN TYPE III SOURCES IS CREATED BY SPONTANEOUS (RAYLEIGH) SCATTERING OF PLASMA WAVES ON THERMAL IONS OF THE CORONA. THE NONLINEAR CONVERSION OF PLASMA WAVES INTO ELECTROMAGENTIC WAVES AT THE FREQUENCY OF THE FUNDAMENTAL TONE IS INSIGNIFICANT FOR TYPICAL TYPE III BURSTS. EMISSION OF THE SECOND HARMONIC IS CAUSED BY THE COMBINATION SCATTERING OF EXCITED PLASMA WAVES ON FLUCTUATIONS OF THE TYPE OF PLASMA WAVES WHOSE LEVEL IS CONSIDERABLY ENHANCED IN COMPARISON WITH THERMAL WAVES. THIS INCREASE IS CAUSED BY THE RAYLEIGH SCATTERING OF EXCITED PLASMA WAVES. ESTIMATES OF THE CONCENTRATION OF FAST ELECTRONS IN FLUXES NECESSARY FOR EXPLAINING THE OBSERVED INTENSITY OF TYPE III BURSTS (ABOUT 1-10 ELECTRONS TIMES CM PRIME NEGATIVE3) SATISFACTORILY AGREE WITH THE RESULTS OF ROCKET MEASUREMENTS OF THE DENSITY OF HIGH ENERGY ELECTRONS IN INTERPLANETARY SPACE ARISING DURING SOLAR FLARES. THE AUTHORS DISCUSS THE POSSIBILITY OF EXPERIMENTAL CHECKING OF THE DEVELOPED THEORY. THEY ESTIMATE THE MINIMUM CONCENTRATION OF PARTICLES IN ION FLUXES (N SUBS PRIMEMIN IS SIMILAR OR EQUAL TO 200 IONS TIMES CM PRINE NEGATIVE3) NECESSARY FOR EXCITING PLASMA WAVES IN THE CORONA, SHOWING THE LOW EFFICIENCY OF IONS IN GENERATING TYPE III BURSTS. FACILITY: RADIO PHYSICS INSTITUTE AT GOR'KIY UNIVERSITY.

UNCLASSIFIED

Acc. Nr.: AP0042575

Ref. Code: UR0033

JPRS 50162

Theory of Type-III Solar Radio Bursts

(Abstract: "On the Theory of Bursts of Type-III Radio Emission," by V. V. Zheleznyakov and V. V. Zaytsev, Radio Physics Institute at Gor'kiy University; Moscow, Astronomicheskiy Zhurnal, Vol 47, No 1, 1970, pp 60-75)

A study was made of the influence of nonlinear effects on the dynamics of development of beam instability under conditions typical for sources of type-III radio emission. The authors demonstrate that it is necessary to take into account the quasilinear relaxation of the distribution function for fast electrons, whose deformation time is at least not greater than the characteristic time of development of the most effective nonlinear process related to induced scattering of beam-excited plasma waves on coronal thermal ions. For this reason the stabilization of beam instability is unimportant. The authors clarify the role of collisions and inhomogeneity of the leading edge of the stream in the restoration of beam instability after quasilinear relaxation. The article includes computations of the energy of plasma waves generated by a stream of fast electrons and the conditions are determined under which it is possible to neglect pumping of plasma waves in the spectrum due to induced scattering. Thus, this article examines the nature of the development of beam instability in applica-

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tion to type-III bursts and formulas are derived for determining the energy of plasma oscillations excited by an electron beam in the corona. Part II will be a study of the process of conversion of plasma waves into radio emission. This will make it possible to estimate the electron concentration in the stream necessary for generating type-III radio emission.

19760560

USSR

UDC 553.495

BORKOV, F. P., YEGOROV, N. I., and ZAYTSEV, Ye. V., "Krasnodarneftegeofizika," Moscow Geological Prospecting Institute imeni S. Ordzhonikidze)

"Special Features of the Formation of High Uranium Concentrations in Oxidizing Conditions"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geologiya i Razvedka, No 5, May 71, pp 51-57

Abstract: Special features of the localization and formation of high uranium concentrations in an oxidizing medium are investigated. The presence of a weathering crust is the characteristic feature of the geological zone structure. The uranium concentrations are nonequilibrium. The coefficient of radioactive equilibrium fluctuates between 1 and 78%. The shift of radioactive equilibrium toward uranium and a nearly total absence of radium in samples indicate the recent age of mineralization and the continuation of deposition and redeposition processes. It is concluded that the ore was formed in the process of weathering crust formation because of the uranium redistribution liberated from the ore as a result of oxidation, on the one hand, and introduction of uranium from ground waters rich in ferro-hydrooxides, jarosite, and phosphate-ions, on the other hand.

1/1

1/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--BEHAVIOR OF CHALCOGENIDE INCLUSIONS DURING THE ANODIC DISSOLUTION OF COPPER AND NICKEL -U-
AUTHOR-(03)-GREIVER, T.N., ZAYTSEV, YU.A., KRYLOVA, M.S.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(2), 10-12

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--COPPER, NICKEL, ELECTROLYTE, CORROSION RATE, SULFIDE, SODIUM CHLORIDE, SULFURIC ACID, SELENIDE, TELLURIDE, DISSOCIATION CONSTANT, OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0743 STEP NO--UR/0136/70/043/002/0010/0012

CIRC ACCESSION NO--AP0107285
UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0107285
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION BEHAVIOR OF SYNTHESIZED CHALCOGENIDE INCLUSIONS IN CU AND NI WAS STUDIED AT 25, 50, AND 650EGREES. THE ELECTROLYTE FOR THE CU DISSOLN. CONTAINED CU 40 AND H SUB2 SO SUB4 150 G-L.; FOR NI DISSOLN. THE ELECTROLYTE CONTAINED NI 60, NA SUB2 SO SUB4 60, NACL 50, AND H SUB3 BO SUB3 10 G-L (PH SIMILAR TO 3). FOR CU, THE OPEN CIRCUIT VOLTAGE WAS 0.10-0.15 V MORE POS. FOR THE CU CONTG. THE CHALCOGENIDE THAN IT WAS FOR PURE CU. THE POLARIZATION DECREASED IN THE SERIES CU SUB2 S GREATER THAN CUTE SUB0.8 GREATER THAN CU SUB2 TE GREATER THAN CUSE SUB0.8 GREATER THAN CU SUB2 SE AND DECREASED WITH TEMP. THUS, THE DEGREE OF OXION. INCREASED FROM SULFIDE SMALLER THAN TELLURIDE SMALLER THAN SELENIDE. IN MOST CASES THE DISSOLN. WAS LIMITED BY THE POLARIZABILITY OF THE CHALCOGENIDE (THE SULFIDE OR TELLURIDE); THE DEGREE OF CATHODIC CONTROL VARIED BETWEEN 70-100PERCENT. ONLY VERY SMALL CURRENTS FLOWED DURING DISSOLN. OF NI CONTG. NI SUB3 S SUB2, NI SUB3 SE SUB2, NISE, NI SUB2 TE SUB3 OR NITE.

UNCLASSIFIED

Acc. Nr.: AR0102864

Ref. Code: UR0000

USSR

UDC 669.777.053.4

JPRS 50625

ZAYTSEV, YU.A.

"Forms of Tellurium and Sulfur in Sulfide-Alkaline Solutions"

V sb. Novyye issled. v tsvetn. metallurgii i obogashch (New Studies in Nonferrous Metallurgy and Beneficiation -- collection of works), Leningrad, pp 17-22 (from RZh-Metallurgiya, No 2, Feb 70, Abstract No 2G181)

Translation: On the basis of studies of the properties and reactions of possible components of sodium sulfide-alkaline solutions of Te the following possible variants of qualitative compositions of such solutions have been established: Na_2TeO_3, Na_2TeS_3, Na_2TeS_4, $Na_2S_2O_3$, Na_2SO_4, Na_2FeO_3, Na_2TeS_4, Na_2S_4, $Na_2S_2O_3$, Na_2SO_4, Na_2TeS_3, Na_2TeS_4, Na_2S, $Na_2S_2O_3$, Na_2SO_4, Na_2TeS_4, Na_2S_n, $Na_2S_2O_3$, and Na_2SO_4. By using the derived formulas and the results of reverse titrating of the solutions with iodine, treatment with Zn salt and Na sulfite, and subsequent iodometric determination of sulfur thiosulfate, it is possible to determine a quantitative content of various forms of Te and S in sulfide-alkaline solutions not containing Se. One table. Five references. Author's abstract.

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19860922

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USSR UDC: 533.6.011

ZAYTSEV, Yu. I., KELDYSH, V. V.

"Concerning Detachment of the Compression Shock From the Edge of a Swept-back V Wing"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of Central Aerohydrodynamics Institute), 1972, 3, No 2, pp 135-139 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9B459)

Translation: It is shown that the condition of attachment of the compression shock to the sharp sweptback leading edge of a body, determined on the basis of flow analysis in the immediate vicinity of the leading edge as flow around a flat wedge, is necessary, but not sufficient. Detachment of the shock depends also on boundary conditions downstream from the edge, and may begin considerably sooner than on an equivalent wedge in the cross section. Resumé.

1/1

UDC 577.472(26)

USSR

ZAYTSEV, Yu. P.

Kiev, Morskaya Neystonologiya (Marine Neustonology), Kiev, "Naukova Dumka," 1970, 264 pp

Translation:

Annotation: For the first time in the literature, biological data concerning the boundary layer of the sea and atmosphere, which is the subject of a new area of hydrobiology, neustonology, are correlated in the monograph. Aspects of the method of studying the structure, composition, quantity, ecology, dynamics, and distribution of the neuston are examined. The important role played by neuston in the propagation of marine organisms, and the food chain are discussed. An evaluation of the significance of the work in neustonology on the increase in effectiveness of practical measures aimed at the preservation, regeneration, and rational utilization of the biological resources of the world oceans is given.

The monograph is intended for oceanographers, hydrobiologists, ichthyologists, radiobiologists, and specialists in the fishing industry and conservationists.

1/7

USSR

ZAYTSEV, Yu. P., Morskaya Neystonologiya (Marine Neustonology), Kiev, "Naukova Dumka," 1970, 264 pp

Table of Contents

2/7

USSR

ZAYTSEV, Yu. P., Morskaya Neystonologiya (Marine Neustonology), Kiev, "Naukova Dumka," 1970, 264 pp

3/7

USSR

ZYTSEV, Yu. P., Morskaya Neystonologiya (Marine Neustonology), Kiev, "Naukova Dumka," 1970, 264 pp

4/7

USSR

ZYTSEV, Yu. P., Morskaya Neystonologiya (Marine Neustonology), Kiev, "Naukova Dumka," 1970, 264 pp

5/7

USSR

ZYTSEV, Yu. P., Morskaya Neystonologiya (Marine Neustonology), Kiev, "Naukova Dumka," 1970, 264 pp

6/7

USSR

ZYTSEV, Yu. P., Morskaya Neystonologiya (Marine Neustonology), Kiev, "Naukova Dumka," 1970, 264 pp

7/7

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--POLYMERIZATION OF VINYL MONOMERS IN LAYER COMPOUNDS OF MONTMORILLONITES -U-

AUTHOR-(04)-ZAYTSEV, YU.S., KISEL, N.G., YENALYEV, V.D., TURZHENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 213-217

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, MONOMER, VINYL COMPOUND, PEROXIDE, MINERAL, CHEMICAL STABILIZER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0402 STEP NO--UR/0069/70/032/002/0213/0217

CIRC ACCESSION NO--AP0113320

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203730004-0"

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113320

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY HAS BEEN MADE OF THE POLYMERIZATION OF VINYL MONOMERS IN LAYER COMPOUNDS OF MONTMORILLONITE USED AS A STABILIZER OF MONOMER EMULSIONS. THE DEPENDENCE OF THE CHANGE IN THE INTERPLANAR SPACES IN MONTMORILLONITE DURING POLYMERIZATION OF VINYL MONOMERS BETWEEN ITS LAYERS ON THE POLARITY OF MONOMERS AND THE NATURE OF PEROXIDE INITIATORS HAS BEEN STUDIED BY ROENTGENOGRAPHY. APART FROM STABILIZING MONOMER EMULSIONS, BENTONITE CLAYS SERVE AS SITES ONWHICH POLYMERS ARE FORMED ON THE SURFACE AND BETWEEN LAYERS OF MONTMORILLONITE PARTICLES.

UNCLASSIFIED

USSR

VLASOV, L. G. and ZAYTSEV, Yu. V.

UDC: 621.316.8

"Metallic Film Trimmer Resistors"

Kiev, Izvestiya VUZ--Radioelektronika, Vol. 14, No. 1, 1971, pp 103-104

Abstract: This brief communication describes the manufacture of trimmer resistors in which the resistance material consists of a metallic film of cadmium deposited on an insulating substrate, electrotechnical pertinax, by cathode sputtering. Such a procedure is preferable to the current mode of manufacturing these low-ohm resistors in the Soviet Union, in which the conducting material is graphite and lampblack, because of the difficulties encountered. Cadmium was chosen for the new process because it is highly immune to moisture, corrosive media; it also has a low temperature coefficient of resistance. The substrate is stamped out in the shape of a horseshoe from a pertinax strip 0.8 mm thick. The terminals are covered with silver to provide solid contact with low resistance between the resistance element and the leads. Elements of various resistance values can be produced by varying the duration of the sputtering procedure. The results of experiments for finding the basic parameters are given.
1/1

USSR

UDC: 621.382.233

ZAYTSEV, Yu. V., MARCHENKO, A. N., and SUROGIN, L. I.

"Fixed Semiconductor Resistors"

Kiev, Izvestiya VUZ--Radioelektronika, Vol 13, No 11, 1970, pp 1391-1393

Abstract: This brief communication reports a solution to the vexing problem of manufacturing precision, low-ohm resistors designed to operate in a wide temperature range. The material used is monocrystalline silicon with a high concentration of impurities. A cutaway view of the new resistor shows it to have the same shape and structural design as standard types. The process of its manufacture is given in some detail. A curve showing the tolerated electrical load as a function of the temperature is flat from 0 to 150° C, but drops off sharply and linearly to zero tolerated load at 275°C. A second curve of the temperature coefficient of resistance as a function of the silicon resistivity shows a rise in the temperature coefficient from 7 to 11%/degree over a resistivity range of 0.01 to 0.1 ohms cm. These resistors are designed for circuits requiring low temperature factors and high resistor accuracy. They have the added advantages of low noise level and the ability to sustain short-term overloading.

1/1

USSR

UDC 621.383.5.001.5

YEGOROV, V.S., Candidate Of Technical Sciences; ZAYTSEV, A.A., Candidate Of Technical Sciences; MURKINA, M.V., Engineer; SHUL'MEYSTER, L.F., Candidate Of Technical Sciences

"Device For Determination Of The Current-Voltage Characteristic Of A Photoelectric Converter"

Elektrotekhnika, No 2, Feb 1972, pp 44-46

Abstract: Methods are considered for determining the revered saturation current I_o and the parameter A in the working region of the current-voltage characteristic of silicon photoelectric energy convertors. The principles of operation and the units of a functional scheme are described. The scheme contains a logarithmic amplifier, storage devices, division unit, selective cells, converter of log I_o into I_o, digital presentation unit, and a commutator. The device developed makes it possible to determine the parameters A and I_o of photoelectric converters with an area from 1 to 4 cm^2 in the intervals A = 1 - 5, $I_o = 1 \cdot 10^{-6}$ ÷ $1 \cdot 10^{-4}$ a. The measurement error is not more than 5 percent and the measurement time does not exceed 10 sec. 4 fig. 4 ref.

1/1

USSR

UDC: 53.082.52

ARTYSHEVSKIY, P. P., ZADDE, V. V., ZAYTSEVA, A. K., ZATULOVSKIY, L. M., KRAVETSKIY, D. Ya., STREL'TSOVA, V. I., CHAYKIN, P. M., All-Union Scientific Research Institute of Electrothermal Equipment

"Photovoltaic Cells Made From Silicon Crystals With Special Cross Sectional Shapes Grown by the Stepanov Method"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 522-524

Abstract: A previously described method (Artyshevskiy, P. P. et al., Izv. AN SSSR: Ser. Fiz., Vol 35, 1971, p 469) was used for growing noncylindrical silicon crystals to be tested in solar batteries. Polycrystal and single crystal specimens of *p*-conductivity with resistivity ranging from 0.1 to 15 Ω·cm were grown, cut transversely into thin plates and polished on one face. The *pn* junction was made by phosphorus diffusion. The finished cells had an area of 0.8-1.2 sq. cm. Cells made from polycrystals had higher efficiency than Czochralski cells. The shunt resistance of the polycrystals was high, showing high purity of the semiconductor material. The load characteristics of cells made from single crystals were not as good as those of the polycrystal cells, which was attributed

ARTYSHEVSKIY, P. P. et al., IAN SSSR: Ser. Fiz., V 36, 1972, pp 522-524

to the low purity of the single crystal material as evidenced by low shunt resistance. This same index shows that contamination is a random factor rather than being due to the method of crystal growing. On the whole, the results show that photovoltaic cells made from noncylindrical crystal rods are at least as good as cells made from Czochralski crystals.

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USSR

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"Flux-Paint for Making Printed Circuit Boards"

V sb. Obmen opytom v radiopromyshlennosti (Experience Pooling in the Electronics Industry--collection of works), Vyp. 6, Moscow, 1970, pp 29-30 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V272)

Translation: A flux-paint is proposed which acts simultaneously as a protective paint during etching, and a flux coating during soldering and assembly of units and subassemblies on circuit boards. The flux-paint contains solutions of rosin in ethyl alcohol, polyester resin, and methylethylketone in a 2-6% solution of methylcellulose. Resumé.

1/1